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ABSTRACT

This document describes the curriculum and objectives of the Certificate of Completion in Dental Assisting at Maui Community College, Hawaii. Hawaii is below the national average in oral health care, with as many as 40% of Maui residents being underserved. Dental disease among the uninsured and underinsured in Hawaii is three times the national average. Issues include the lack of fluoridation, inadequate reimbursement for dental care, and the shortage of dental auxiliaries. Additionally, ethnic groups such as Hawaiian, Pacific Islander, and those of Filipino ancestry have higher incidence of tooth decay and oral health needs. Data presented here indicate that there will be a need for 50 dental auxiliary employees per year state wide through 2010. The article argues that more than 300 students on lists for nursing programs will not be admitted to those programs, and the Dental Assisting Program expands options for these students. The projected annual cost for the program was \$55,620 in 2002-03 and \$58,399 in 2005-2006, with enrollment ranging from 11 in the first semester to 24 in fall 2005. The study assumes that all classes will be full, and that students will attend both full- and part-time. Compares the cost of this program to other Maui Community College programs. (NB)

UNIVERSITY OF HAWAII
Maui Community College

Partnering on a Curriculum to Address the Dental Care Crisis in a
Rural Island Community

The First Step of a Career Ladder Program in Dental Assisting

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Table of Contents

Contents	page
Objectives of the Curriculum	3
Appropriate Functions of the College and the University	3
Program Organization	7
Enrollment Target Group	8
Resources Required	9
Program Efficiency	11
Program Effectiveness	11
Table 1: Program Health Indicators	12

Appendices

A	Dental Curriculum	13
	Dental Assisting Certificate of Completion Prerequisites	
	Dental Assisting Certificate of Completion Program Goals	
	Dental Assisting Core Competencies	
	College Catalog — Dental Assisting Program Map	
	College Catalog — Dental Assistant Courses (DENT)	
	Dental Hygiene Associate Degree Curriculum (Proposed)	
B	Labor Department Employment Outlook	17
C	Community Needs Assessment	18
D	Planned Resources	20
E	Projected Assessment of Program Efficiency	21
F	Comparative Costs per Student Semester Hour	22
G	Community Support	23

1. What are the objectives of the curriculum?

The long-term goal is to develop a career-ladder Certificate of Completion in Dental Assisting and an Associate degree in Dental Hygiene at Maui Community College (see Appendix A). This report addresses the design and implementation of the first step, a Certificate of Completion (CC) in Dental Assisting.

The primary objectives of the curriculum are to meet student, County, and State needs for entry-level dental paraprofessional staff. Specific learning objectives of the Dental Assisting curriculum include:

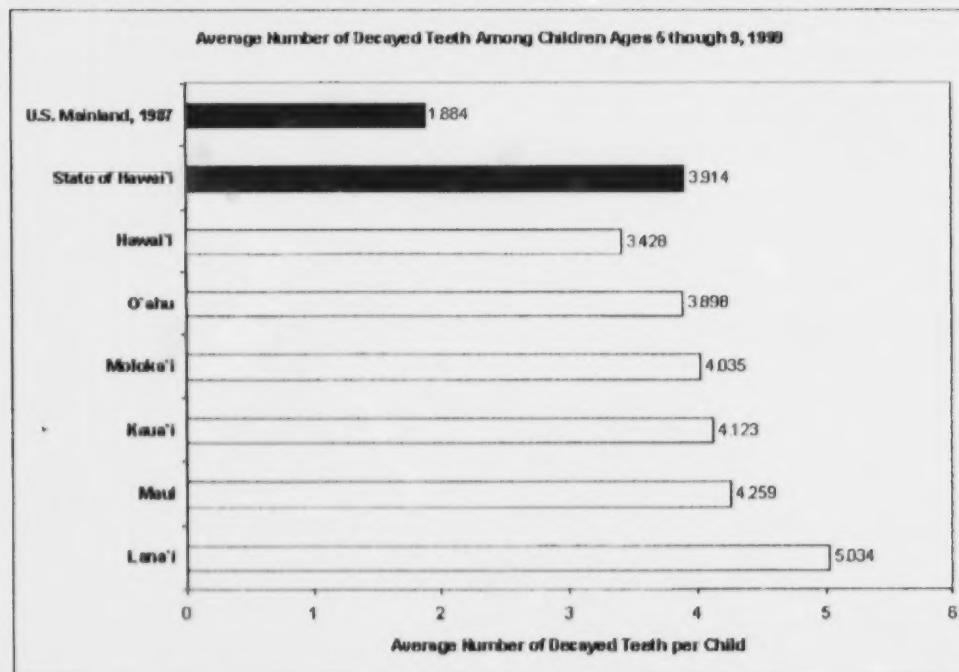
- Demonstrate basic theoretical background in biological science and dental radiology to support a dental assisting practice and build the foundation for an associate degree program in dental hygiene.
- Demonstrate knowledge and skills to provide chairside dental assisting in the dental office, schools, or other settings.
- Demonstrate knowledge and skill in business office procedures.

2. Are curriculum objectives appropriate functions of College & University?

The curriculum objectives are appropriate functions of the College and the University, as they are consistent with:

- The need for an entry-level multi-cultural labor force to address the crisis in oral health care.
- The provision of a skilled workforce to fill community demand.
- The mission of the University of Hawaii, the UH Community Colleges, and the approved academic priorities of Maui Community College.

Crisis in Oral Health. Increasing the number of dental providers will help to address the crisis in oral health care on Maui and in Hawaii. As depicted in the graph, children in Hawaii have twice the tooth decay of the US Mainland average and the situation is even worse in Maui County on its three islands of Maui, Lanai, and Molokai. (Source: http://tako.icsd.hawaii.gov/doh/resource/dental/fluoridation/status_charts.html).



Hawaii is below the national average in oral health care. Loren Pang, M.D., Maui County Health Officer, estimates 33 percent of Maui County residents do not have adequate access to dental health care. This estimate is augmented in *the Oral Health Report 2001* produced by the Hawaii State Primary Care Association, which asserts that almost 40 percent of Maui residents are considered underserved. Dental disease among the uninsured and underinsured is three times the national average. The issues are complex and include the lack of fluoridation, inadequate reimbursement for dental care, and the shortage of dental auxiliaries (dental assistants and dental hygienists).

Dental/oral health is a priority of the Surgeon General and the federal Department of Health and Human Services. In April 2003, the DHHS released a *National Call to Action to Promote Oral Health* aimed at improving oral health and preventing disease for all Americans. Secretary Tommy G. Thompson said, "Oral health is integral to overall health. It's critical that we all work together to improve the nation's oral health, especially among children."

Oral diseases and disorders are progressive and cumulative and become more complex over time. The DHHS asserts that, if current trends persist, millions of Americans will needlessly lose teeth, endure pain, and develop oral infections that can contribute to worsened chronic diseases, compromising their overall health and well being.

Certain ethnic groups such as Hawaiian, Pacific Islanders, and those of Filipino ancestry have higher incidence of tooth decay and oral health needs. This reality emphasizes the need to draw from these communities in preparing new oral health/dental allied health providers. The American Dental Education Association endorses this approach. Based on a review of the literature the ADEA concluded, "...increasing the number of minority health care providers will increase the use of health care services by minority groups." (Source: *The Report of the ADEA President's Commission*, March 2003.).

Hawaii currently has an unaccredited one-semester Dental Assisting program at Kapiolani Community College and a bachelor's degree Dental Hygiene program at the University of Hawaii at Manoa. Both institutions are situated in Honolulu on the urbanized main island of Oahu.

The Dental Assisting program at Maui Community College will fill a different niche, targeting neighbor island students and those with a long-term goal of an Associate degree in Dental Hygiene. Sixty percent of the Dental Hygiene programs in the United States are Associate degree programs. Most students will take three years to complete the general education, dental assisting, and dental hygiene curriculum. The career-ladder format enables all students to gain academic experience and skills while they progress in the dental field and provide service in the community.

Community Demand for Skilled Workforce. Early assessment of the demand for dental auxiliary was generated by the Research and Statistics Office of the state Department of Labor and Industrial Relations. The employment demand projected over a 10-year period was extracted from *Employment Outlook for Industries and Occupations* and is presented in Appendix B. In brief, the data project an

average opening for 10 Dental Assistants in Maui County yearly, and 50 statewide, over the 10-year period through the year 2010.

To verify the need identified by the state employment service, the College completed its own analysis. The purpose of the *Community Needs Assessment for Dental Assisting and Dental Hygiene Programs* was to assess the demand for dental auxiliaries specifically in Maui County. The survey used a tool developed at Foothills Community College and modified by the College. The questionnaire was distributed via mail and during a Maui County Dental Society meeting. The questionnaire and results of the survey are included in Appendix C.

The *Community Needs Assessment* substantiated an employment demand for new hires. Respondents indicated trying to fill dental assistant positions 29 times collectively in the past six months, and in the past three years to hiring 54 new full-time and 24 part-time dental assistants. When asked if a shortage of dental assistants exists in Maui County, 94 percent of the responses were in the affirmative.

An employment demand for dental paraprofessionals at the national level is also evident. Based on United States labor information on dental assisting:

Rapid employment growth and substantial replacement needs should result in good job opportunities. Population growth and greater retention of natural teeth by middle-aged and older people will fuel demand for dental services.

Older dentists, who are less likely to employ assistants, will leave and be replaced by recent graduates, who are more likely to use one, or even two. In addition, as dentists' workloads increase, they are expected to hire more assistants to perform routine tasks, so that they may devote their own time to more profitable procedures. (<http://www.state.hi.us/dlir/rs/loihi/>)

Community needs assessments at the local and state, as well as national, levels substantiate the need for a Dental Assisting program in Maui County. There is a fundamental and increasing concern that there are not providers to meet the needs of more than one third of the population who currently have no access to dental care.

University and College Mission. The clearly stated mission in the *UH Community Colleges Strategic Plan 2002-2010* is to provide access to career and technical programs that prepare students for immediate employment and provide the trained work force needed by communities and the State (*Strategic Plan, p. 1*).

The College mission is consistent with the mission of the UH Community Colleges. The Dental Assisting program will support this mission by providing needed technically trained employees in response to a community request. The Dental Assisting program will support State and County initiatives to diversify the economic base.

In discussion of its *Academic Development Plan 1990-1996* priority "to develop new instructional programs in response to community needs," the College identified the requirement for a community needs assessment to ascertain the possible demand for new programs. The *Community Needs Assessment* was completed in Fall 2001 and was utilized in 2002 to obtain the *Authorization to Plan*. The *College Strategic Plan 2003-2010* and Budget priorities support development of a Dental Career Ladder program at Maui Community College.

3. How is the program organized to meet its objectives?

The Dental Assisting program, administered by the Dean of Instruction through the Professional Community Unit under the Nursing/ Allied Health program, is based on competencies identified by advisory committee members, partners in the community, and the American Dental Association. The program has been reviewed and passed through the College Nursing Department, the Professional Community Unit, the College Curriculum Committee, the Academic Senate, and the College and University administration.

The Dental Assisting curriculum is organized according to the *American Dental Association Commission on Dental Accreditation Requirements for a Dental Assisting Program* and with consultation from the Maui County Dental Association and the Maui County Dental Alliance.

Hands-on experience is achieved through externships at local dental offices and clinical practice at the Maui Oral Health Center.

Accreditation is being sought from the American Dental Association Accreditation Commission. An accreditation self-study has been submitted, and a site visit is expected in late fall of 2003 or early spring of 2004.

4. Who will enroll in the program?

There are more than 300 pre-health students at the College who are completing prerequisites or on waitlists for the College's Nursing programs. Many of these students will not enter a Nursing program due to limited English competency or personal preference. The Dental Assisting program has expanded educational options for these students while diversifying the island's employment opportunities and meeting community needs for oral health caregivers.

Most students will complete the Dental Assisting program within a cohort. Some students may choose to enroll part-time completing the Oral Biology I, Oral Biology II, and Dental Office Management courses in the first year and the clinical Dental Assisting courses in the second year. Advanced standing is granted in selected courses to Certified Dental Assistants who demonstrate competency. The process of evaluating competency includes satisfactory performance on course examinations and clinical competency demonstrated by performance.

Thirteen students (two part-time) qualified for admission to the first Dental Assisting cohort at Maui Community College in classes that began August 26, 2002. On May 18, 2003, nine students (83% retention) graduated from the Dental Assisting program with a Certificate of Completion. Six of the nine students hope to continue to the Associate degree Dental Hygiene program that is in the planning stages for fall 2006. Twenty-four students have been admitted to the fall 2003 Dental Assisting cohort, and seven students are on a waiting list for admission.

The nine students in the first graduating class represent Maui's ethnic diversity. There were two Native Hawaiians, one Samoan, two Japanese, and four Filipino students who graduated. The Caucasian student was part-time and will

graduate next year. The students' ethnicity helped them to work effectively teaching the ethnically diverse patients who selected the Maui Oral Health Center for their dental care.

The College will continue to recruit students from Maui County high schools and from the local dentist offices that have indicated a need for training of their employees. Special emphasis will be placed on recruiting students from under-represented minority and other groups expressing interest in oral health.

5. What resources are required for implementation and first 5-year cycle?

Resources for the Dental Assisting program include needs for faculty, facilities, equipment, and supplies. The funding needed in academic year 2002-03 for program development and implementation was provided through grants from the Carl Perkins Vocational Education, the County of Maui, Hawaii Medical Services Association (HMSA) Foundation, Hawaii Dental Services, Hawaii Family Dental Centers, and Maui County Dental Society. (Appendix G)

In collaboration with Maui County (grantor for facilities rental and 0.5 FTE Dentist), the College established the Maui Oral Health Center in an office complex in Central Maui. In preparation for classes that began August 26, 2002, the facility was painted and refurbished by students of the College Apprenticeship program. Funding from the HMSA Foundation was crucial to implementation of the Maui Oral Health Center program. Equipment and supplies were procured, and scholarships awarded. The College was fortunate to find two Dental Hygienists and a Dentist who assembled hours away from their private practice to provide staffing for the Center and instruction for the program.

The dental service portion of the Maui Oral Health Center began with a blessing of the facility on October 10, 2002. The facility provides dental education and preventative and basic dental services for currently underserved Maui County residents. To date, 350 individuals have received care. Referrals were obtained from the Office of Social Ministry Dental Van, Maui Community Clinic, Hui No Ke Ola Pono, and many private physicians and dentists. The large number of patients

with no recent medical or dental care is evaluated first by the College Nurse Practitioner to identify potential health problems impacting dental care.

There are still 220 patients on a waiting list to be seen. Serving in the off-site clinics not only delivers oral health care to underserved populations but also provides a means to develop culturally competent oral health providers, consistent with the ADEA President's Commission recommendation #3.4. Additionally, Dental Assisting students visited five preschools and the Special Education class at Baldwin High School providing instruction on the basics of oral health care. An unexpected positive outcome of the Maui Oral Health Center is the increase in community awareness of the need for oral health services in Maui County. Most people are shocked to learn of the need in Hawaii, especially among children.

In this first year, the Oral Health Center is staffed through a three-prong approach: 1) one dentist, supported through grant funds from the County of Maui, provides eight hours per week of dental care; 2) one Registered Dental Hygienist instructor, supported through a Carl Perkins-funded 0.5 position; and 3) the Dental Assisting students. The challenge in meeting this goal has been filling the 0.5 FTE dentist position. Most dentists are fully committed or are looking for a 1.00 FTE position. Recruitment efforts are continuing through the Hawaii Dental Society newsletter and word of mouth.

In an attempt to secure additional funds for a full-time dentist, the College and the Office of Social Ministry partnered and submitted the *Maui Dental Collaborative* grant to Maui County. This request includes funding for a full-time dentist who would work two days a week on the mobile dental van and three days a week in the Maui Oral Health Center. It is anticipated the strong community support and the acute oral health needs in Maui County and Hawaii will sustain future funding for the Dental Assisting program. Grant applications are in process in collaboration with the Maui County Dental Alliance.

Current general education faculty, library, computer labs, learning resource media center provide the necessary academic support. Appendix D shows the projected funding to initiate and continue programming in the first 5-year cycle.

6. How efficient will the program be?

The projected cost per student semester hour (SSH) ranges from \$109 in the first year, due to limited enrollment and start up costs, to \$50/semester in continuing years.

<i>Dental Assisting</i>	<i>Fall 2002</i>	<i>Fall 2003</i>	<i>Fall 2004</i>	<i>Fall 2005</i>
Projected Cost/SSH	\$109	\$54	\$52	\$52

Appendix E provides data on the projected average class size, FTE students, FTE student/faculty ratio, total Student Semester Hour (SSH), and cost per SSH. Included are the assumptions upon which the projections are based and which account for the gradual cost reduction to \$52/semester.

When compared to the cost per SSH of other career programs at the College, the projected Dental Assisting expenditures rank favorably. Based on information from Fall 2000, the data range from a low of \$22 per SSH for the Business Careers program to a high of \$331 per SSH for the Agriculture program, with an average cost of \$130 per SSH. Comparative costs of the other career programs at the College are shown in Appendix F.

7. How will effectiveness of the program be demonstrated?

The total evaluation plan includes annual instructor and administrative evaluation of instruction, student evaluation of instruction, evaluation of completion rates, formal and informal evaluation of cooperative education and internship performance, and employer evaluation of graduates. Annual evaluation also includes analysis of the Program Health Indicators (Table 1).

Assessment of continuing need for the program will be conducted. Student and employer satisfaction survey, and a compiled analysis of the yearly Program Health Indicators will serve as the basis for the recommendation to the University administration through the normal curriculum review channels.

Table 1

Program Health Indicators

Standards to be used to evaluate yearly program performance.

<i>Program Demand/ Centrality</i>	<i>Min</i>	<i>Satis</i>	<i>Max</i>
Number of student majors	20	22	24
Number of classes taught per year	9	9	9
Number of classes wait-listed/over enrolled	0	2	9
<i>Program Efficiency</i>	<i>Min</i>	<i>Satis</i>	<i>Max</i>
Class size average	20	22	24
Class fit	83%	92%	100%
Number of small classes (<i>n</i> <10 students)	0	0	0
Percent of sections taught by lecturers	25%	40%	60%
Number of Advisory Committee meetings <i>per academic year</i>	1	2	3
<i>Program Outcomes</i>	<i>Min</i>	<i>Satis</i>	<i>Max</i>
Student evaluations: percent high ranks	85%	95%	99%
Course completion rate	80%	85%	100%
Program completion rate	80%	90%	100%
Placement rate (<i>Grads employed in related field or continuing w/ed</i>)	85%	90%	100%
Percent graduates passing (<i>Dental Assistant Certification Exam</i>)	80%	90%	100%
<i>Program judged adequate or better on survey by:</i>			
Employers of graduates	85%	95%	100%
Employers of in-service trainees	85%	95%	100%
Employers of interns or cooperative education students	85%	95%	100%

After five years of operation in provisional status, the Dean of Instruction, Unit Chair, Nursing/ Allied Health Coordinator, and Dental Program Coordinator will gather data to be used in evaluation of the program for its continuation in permanent status. A community assessment to ascertain the continuing need for the program will be conducted. Student and employer satisfaction surveys and a compiled analysis of the yearly Program Health Indicators will serve as the basis for the recommendation to University administration through normal curriculum review channels.

Appendix A

Dental Curriculum

Dental Assisting Certificate of Completion Prerequisites

The following minimum competencies will be required of students entering the Dental Assisting Certificate of Completion program:

- English 22 with C or better or placement at English 100
- Biology 100 with C or better
- Entry-level computer literacy (*competency test to be administered on request*).

Dental Assisting Certificate of Completion Goals

The Dental Assisting Certificate of Completion program is a two-semester curriculum that prepares individuals to work as chairside assistants in dental offices and other settings. Upon completion of the Dental Assisting program graduates are eligible to take the national Dental Assistant Certification Exam.

Dental Assisting Core Competencies

A core of courses will provide students with core competencies. Students will:

- Discuss oral anatomic position and relationships between skull, arteries, veins, lymphatic, musculature and nervous structures of head and neck.
- Identify dental landmarks, oral microbiology and dental nutrients.
- Differentiate normal and abnormal oral structures.
- Identify common abnormalities and infections.
- Describe pharmacology of local anesthetic solutions, analgesic gases and psychosedatives, and antibiotic agents.
- Describe the dental profession, including specialties, history, professional and legal responsibilities.
- Describe the role of dental auxiliaries, including legal and ethical responsibilities.
- Perform all duties assigned to dental assistants at a standard level of clinical proficiency with supervision.
- Describe orally and in writing theoretical information and demonstrate all clinical skills and techniques utilized in the role of dental assistant.

- Describe and explain methods and procedures for maintaining proper sterile and aseptic conditions in the dental office.
- Identify the various materials used in the practice of dentistry and the structure, composition, uses, manipulations and properties of these materials.
- Demonstrate competency in manipulation of dental amalgam and commonly used impression materials.
- Obtain full mouth survey with diagnostically usable film. Transcribe and maintain clinical records that record pertinent data and information required for procedures, film evaluation, and mailing.
- Describe legal and safety requirements related to operation of radiographic equipment.
- Demonstrate knowledge, skills and attributes of dental assistants in office setting including, appointments, financial records, dental payment plans, dental insurance, dental computer software, and operating office equipment.

College Catalog— Dental Assisting Program Map

The Dental Assisting Certificate of Completion program is a two-semester program that prepares individuals to work as a Chairside Assistant in dental offices and settings. The employment rate for Dental Assistants in Maui County is expected to increase by 25 percent in the 10-year period through the year 2006, according to state Labor Department statistics.

The curriculum is organized in accordance with requirements of the American Dental Association Commission on Dental Accreditation for a Dental Assisting program and with consultation from the Maui County Dental Association and the Maui County Dental Alliance. Hands-on experience is achieved through clinical practice in the Maui Oral Health Center and externships in dental offices. Graduates are eligible to take the national Dental Assisting Certification Exam. The following minimum competencies are required of students entering the DENT program: (a) English 22 with grade C or better or placement at English 100; (b) Biology 100 with grade C or better; (c) entry-level computer literacy (competency test administered on request). Application deadline for the fall cohort is May 1.

Requirements for Certificate of Completion (C.C.): 23 credits

Dental 150(2), 151(5), 152(4), 154(1), 164(3),
165(2), 176(2), 177(1)

Business 90 Topic: Dental Office Management(3)
Grade C or better is required in all courses.

A full-time student would take courses in this sequence: *

First Semester (Fall)	Credits	Second Semester (Spring)	Credits
DENT 150 Orientation to Dental Assisting	2	DENT 152 Chairside Dental Assisting	4
DENT 151 Intro to Chairside Dental Assisting	5	DENT 154 Dental Materials	1
DENT 164 Oral Biology I	3	DENT 165 Oral Biology II	2
DENT 176 Dental Radiography I	2	DENT 177 Dental Radiography II	1
BUS 90 Topic: Dental Office Management	3		8
	15		

**Note: Scheduling is designed for students to complete the program in two semesters within a cohort. Advanced standing is granted to Certified Dental Assistants who demonstrate competency. The process of evaluating competency includes satisfactory performance on course examinations and clinical competency demonstrated by performance.*

College Catalog – Dental Assistant Courses (DENT)

150 Orientation to Dental Assisting

Prereq: Admission to Dental Assisting program, or consent.

Provides orientation to dental practice, including specialties, history, professional and legal responsibilities, role of the dental auxiliary, dental and medical terminology, patient communication, and office personnel relationships. Introduces infectious diseases important to dentistry, hazardous materials and waste management, and rules of regulatory agencies (DCCA, OSHA, CDC, and ADA). Teaches disinfection, instrument decontamination, sterilization procedures, tray set-up preparation, and protocols and emergency procedures for hazardous and biohazardous waste or materials. (*Letter grade only.*) 2cr., 1hr. lect./3hr. lab

151 Introduction to Chairside Dental Assisting

Prereq: Admission to Dental Assisting program, or consent.

Introduces basic procedures of chairside assisting, use and care of dental equipment, patient management, instrument identification, sterilization procedures and tray set-up preparation, and manipulation of dental materials, including temporary dressings, cement bases and liners, topical agents, composites, resins, and amalgams. Includes supervised clinical experience in externship environments, instruction in instrument sharpening, dental & periodontal charting, dental assisting functions. (*Letter grade only.*) 5cr., 2hr. lect./9hr. lab

152 Chairside Dental Assisting

Prereq: DENT 151 with at least a C.

Provides supervised clinical experience in dental assisting. Includes advanced and specialty chairside procedures. 4cr., 8hr. lect./lab

154 Dental Materials

Prereq: DENT 151 with at least a C.

Introduces the physical and chemical properties of dental materials, characteristics and manipulation of impression materials, gypsum products, investments, waxes, cements, resins, and metallic and non-metallic restorative materials. 1cr., 2hr. lect./lab

164 Oral Biology I

Prereq: Admission to the Dental Assisting program, or consent.

Discusses general anatomy of the skull; arteries, veins, and lymphatics; musculature; and nervous structures of the head and neck, including the normal periodontal tissues, oral mucous membranes, and salivary glands. Includes the embryologic development of the structures and tissues of the head, neck, teeth and oral cavity, oral microbiology, and nutrition. Discusses the anatomy and identification of teeth, the eruption sequence, normal occlusion, and classification of occlusion. (*Letter grade only.*) 3cr., 2hr. lect./3hr. lab

165 Oral Biology II

Prereq: DENT 164 with at least a C.

Reviews embryonic development of the structures and tissues in the head, neck, teeth, and oral cavity. Discusses histology of the hard and soft tissues of the oral cavity. Explains development of structural defects involving the oral cavity and teeth. Includes normal periodontal tissues, oral mucous membranes, and salivary glands. (*Letter grade only.*) 2cr., 1hr. lect./3hr. lect.-lab

176 Dental Radiology I

Prereq: Admission to the Dental Assisting program, or consent.

Discusses production, characteristics, and biological effects of radiation, and the functions, components, and operation of the x-ray unit. Includes radiation protection and monitoring, chemistry & techniques associated with x-ray film, and developing solutions. Reviews anatomic landmarks, and introduces intra-oral and long-cone radiographic techniques in bitewing, periapical, and occlusal surveys. 2cr., 1hr. lect./3hr. lab

177 Dental Radiology II

Prereq: DENT 176 with at least a C.

Discusses evaluation of film quality and recognition of anomalies & variations in tissue density. Introduces specialized procedures for the periodontic, endodontics, and edentulous patient. Explains forensic and legal considerations, and introduces principles of panoramic and cephalometric film. 1cr., 3hr. lect./lab

Dental Hygiene Associate Degree Program (Proposed)

Prerequisites

General Education and Support Courses:

ZOOL 141 & 142	Human Anatomy & Physiology (4, 4)
FSHN 285	The Science of Human Nutrition (3) - <i>Natural Science #1</i>
MICRO 130	General Microbiology (5) - <i>Natural Science #3 w/lab</i>
PHRM 203	General Pharmacology (3) - <i>Natural Science #2</i>
PSY 100	Survey of Psychology (3) - <i>Social Science</i>
ENG 100	Expository Writing (3) - <i>Communication #1</i>
MATH 100	Survey of Mathematics
or PHIL 110	Introduction to Logic (3) - <i>Quantitative Reasoning</i>
Communication elective (3) - <i>Communication #2</i>	
Humanities elective (3)	

Summer – Transition to Dental Hygiene

DENT 153	Assessment Procedures in Dental Hygiene (3)
DENT 173	Dental Health Education (3)

Fall Semester

DENT 254	Fundamentals of Painology
DENT 256	Applied Pharmacology in Dentistry
DENT 257	Periodontics
DENT 258	Radiographic Interpretation
DENT 262	Clinical Dental Hygiene

Spring Semester

DENT 255	Fundamentals of Pathology
DENT 263	Clinical Dental Hygiene
DENT 264	Community Dental Health
DENT 265	Ethics and Office Practice
DENT 267	Nitrous Oxide and Oxygen Analgesia
DENT 268	Advanced Dental Radiographic Interpretation

Appendix B

Labor Department Employment Outlook

<i>Dental Paraprofessional</i>	<i>Maui County</i>	<i>Statewide</i>
Dental Assistants		
1996 - Base Year Employment	150	1000
2006 - Projected Employment	200	1320
10-Year Job Openings	90	320
Annual Openings due to Growth	5	30
Annual Openings due to Separations	4	20
Average Annual Openings	10	50
Dental Hygienists		
2000 - Base Year Employment	80	850
2010 - Projected Employment	110	1130
10-year Job Openings	50	280
Annual Openings due to Growth	3	30
Annual Openings due to Separations	2	10
Average Annual Openings	5	40

Source.— Dept. of Labor & Industrial Relations, *Employment Outlook for Industries and Occupations*.

Appendix C

Community Needs Assessment:

Dental Assisting & Dental Hygiene Programs

1. In the last six months, how many times have you tried to fill a dental hygiene/dental assistant position?

<i>Dental Assistant</i>					<i>Dental Hygienist</i>			
<i>1 time</i>	<i>2 times</i>	<i>3 times</i>	<i>6 times</i>	<i>Ongoing</i>	<i>1 time</i>	<i>2 times</i>	<i>3 times</i>	<i>Ongoing</i>
4	2	5	1	7	7	3	-	1

- 2a. Referring to question #1, how long did it take you to hire a dental hygienist/dental assistant?

<i>Dental Assistant</i>						<i>Dental Hygienist</i>					
<i>1 mo</i>	<i>2 mo</i>	<i>2-3 mo</i>	<i>4-5 mo</i>	<i>6-7 mo</i>	<i>Seekg</i>	<i>1 mo</i>	<i>2 mo</i>	<i>2-3 mo</i>	<i>4-5 mo</i>	<i>6-7 mo</i>	<i>Seekg</i>
8	3	1	1	1	1	3	-	2	-	3	1

- 2b. Referring to question #2, what was the minimum number of hygienist/assistants who applied for a position in the last six months?

<i>Dental Assistant</i>	<i>Dental Hygienist</i>
69	11

3. In the last 3 years, have you ever had any difficulty in finding a dental hygienist/assistants to hire?

<i>Dental Assistant</i>	<i>Dental Hygienist</i>
Yes 23	Yes 20
No 9	No 8

4. Do you think there is a shortage of dental hygienists/assistants in Maui County?

<i>Dental Assistant</i>	<i>Dental Hygienist</i>
Yes 33	Yes 29
No 2	No 3

5. In the last three years, how many new full-time dental hygienists/ assistants have you employed either because of work expansion, retirement or both?

<i>Dental Assistant</i>	<i>Dental Hygienist</i>
54	21

6. In the last 3 years, how many new part-time dental hygienist/ assistants have you employed either because of work expansion retirement of both?

<i>Dental Assistant</i>	<i>Dental Hygienist</i>
24	28

7. Projecting over the next five years, how many full-time dental hygienist/assistants do you expect to be hiring?

<i>Dental Assistant</i>	<i>Dental Hygienist</i>
39	18

8. Projecting over the next five years, how many part-time dental hygienists/assistants do you expect to be hiring?

<i>Dental Assistant</i>	<i>Dental Hygienist</i>
27	22

9. Do you accept new patients? What criteria do you use for patient acceptance?

Yes 30

No 2

10. What is the waiting period for non-emergent appointments in your practice?

<u>0 wk</u>	<u>1 wk</u>	<u>2 wk</u>	<u><1 mo</u>	<u>1 mo</u>	<u>2 mo</u>	<u>3-4 mo</u>	<u>4-5 mo</u>
3	2	2	5	8	7	2	2

11. Over the next 10 years, how many new dentists do you believe Maui County will need?

<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>10</u>	<u>15-20</u>
2	2	5	1	7	1

12. Based on your experience, do you believe there is a need for dental laboratory technicians:

<i>Maui County:</i>	Yes	22	No	10
<i>In Hawaii:</i>	Yes	16	No	10

13. Do you believe that these educational programs will assist Hawaii in meeting the oral health objectives identified by the Department of Health?

<i>Dental Assistant</i>		<i>Dental Hygienist</i>	
Yes	28	Yes	24
No	1	No	

14. If these programs were developed, would you assist providing mentoring/preceptorship experience in your office?

Yes	24	Yes	18	Possibly: 2
No	5	No	6	

Comments: Please add your thoughts on the development of educational programs for Dental Assistants, Dental Laboratory Technicians, and Dental Hygienists at Maui Community College.

Appendix D

Planned Resources

<i>Cost Item</i>	2002-03	2003-04	2004-05	2005-06
Dental Instructor	45,420	46,328	47,254	48,199
Dental Lecturers	9,000	9,000	9,000	9,000
Supplies	1,200	1,200	1,200	1,200
Equipment (external funded)	-	-	-	-
Total	55,620	56,528	57,454	58,399

Explanatory notes:

1. *Instructor salary based on 1.0 FTE, 9-month instructional position for Dental Hygienist C2-7 salary step to provide Program Coordination and instruction.*
2. *Salary increases assume an annual increase of 2 percent after 2002-03.*
3. *Lecturer cost assumes hiring lecturers for the Oral Biology and Dental Radiography positions.*
4. *Supply and equipment costs assume support from the dental community and external funds.*

Appendix E

Projected Assessment of Program Efficiency

<i>Measure of Efficiency</i>	<i>2002-03</i>	<i>2003-04</i>	<i>2004-05</i>	<i>2005-06</i>
Average Class Size: Fall	11	24	24	24
Average Class Size: Spring	10	24	24	24
Average FTE Majors/semester	21	48	48	48
Student-Faculty Ratio/Lecture	12 to 1	24 to 1	24 to 1	24 to 1
Student-Faculty Ratio/Internship	12 to 1	24 to 1	24 to 1	24 to 1
Annual Faculty credit load	23	23	23	23
Annual SSH	253	552	552	552
Projected Annual Cost	\$55,620	\$56,528	\$57,454	\$58,399
Projected Cost/SSH: <i>Annual</i>	219	102	104	106
Projected Cost/SSH: <i>Semester</i>	\$109	\$54	\$52	\$52

Projection assumptions:

1. *All classes full.*
2. *Faculty load will be only in the program.*
3. *Majors attend full and part time.*
4. *Total SSH based on student SSH for fall and spring semesters.*

Appendix F

Comparative Costs per Student Semester Hour (SSH)

<i>Program</i>	<i>Cost*</i>	<i>SSH**</i>	<i>PerSSH</i>
Business Careers	35,127	1566	22
Etron-Cmptr Engineering	86,599	1390	62
Hotel Operations	29,262	449	65
Accounting	73,479	726	101
	22,788	142	101
Auto Body			
Welding	4,215	41	103
Fashion Technology	25,632	226	113
	52,633	437	120
Human Services			
Office Administration & Tech	105,135	850	124
Administration of Justice	27,648	201	138
Automotive Technology	49,209	353	139
Food Service	173,864	1184	147
Carpentry/Drafting	24,992	159	157
Building Maintenance	37,467	154	243
Nursing	385,836	1232	313
Agriculture	76,724	232	331
Totals/Average	1,210,610	9,342	130

*Source: *Program Operating Resources Summary, Office of the Dean of Instruction, Fall 2000.*

**Source: *Course Enrollment Report, UH IRO, Fall 2000.*

Appendix G

Community Support

<i>Source of Grant</i>	<i>Amount</i>	<i>Purpose</i>
County of Maui	\$110,000	Facility Rent and Dentist
HMSA Foundation	\$25,000	Supplies and Equipment
HDS Foundation	\$5,000	Supplies
Hawaii Family Dental Centers	\$1,500	Scholarships
Maui County Dental Society	\$1,000	Supplies and Equipment



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